

WHAT IS CLAIMED IS:

1. A method for manufacturing a soy protein concentrate comprising the steps of:
  - (a) providing a substantially defatted soybean material;
  - (b) adding water to said material to form a slurry;
  - (c) removing fiber from said slurry to produce a suspension; and
  - (d) ultrafiltering said suspension using a membrane having a molecular weight cutoff of up to 30,000 to reduce the amount of oligosaccharides and to produce a product having a protein content of at least 70 wt.% of total dry matter and an isoflavone content of at least 2 mg/g of total dry matter.
2. The method of claim 1, wherein said defatted soybean material contains less than about 1 wt.% fat, and has a protein dispersibility index of about 90.
3. The method of claim 2, wherein said defatted soybean material further contains about 30 to 40 wt.% carbohydrates and about 5 to 10 wt.% moisture.
4. The method of claim 1, wherein said slurry contains about 5 to 15 wt.% solids.
5. The method of claim 1, wherein said membrane has a molecular weight cutoff of between 10,000 and 30,000.
6. The method of claim 1, wherein said product contains crude fiber less than about 3 wt.% of total dry matter.
7. The method of claim 1, wherein said product contains less than 40 mg of combined raffinose and stachyose per gram of total dry matter.
8. The method of claim 1, wherein said product contains less than about 50 mg of combined raffinose and stachyose per gram of total dry matter.

9. The method of claim 1, wherein said product contains more than about 2.0 mg of soyasapogenols per gram of total dry matter.
10. The method of claim 1 further comprising the step of adjusting the pH of said slurry to at least about 7.0, prior to the step (c).
11. The method of claim 10, wherein the pH of said slurry is adjusted to between about 7 to about 7.5.
12. The method of claim 10, wherein the pH of said slurry is adjusted by adding sodium hydroxide to said slurry.
13. The method of claim 1 further comprising a step of centrifuging said slurry to separate a cake containing a high amount of fiber from said suspension.
14. The method of claim 1 further comprising a step of spray drying said product.
15. The method of claim 1 further comprising the steps of pasteurizing said product and spray drying said product.
16. The method of claim 15, wherein the step of pasteurizing said product is accomplished by jet cooking at a temperature above about 93°C.
17. The method of claim 16 further comprising a step of pasteurizing said suspension prior to said ultrafiltration step.
18. The method of claim 1, wherein said substantially defatted soybean material comprises at least one of soy flakes and soy flour.

19. A method for manufacturing a soy protein concentrate comprising the steps of  
(a) providing a defatted soybean material;  
(b) adding water to said material to form a slurry having about 5 and 15% solids;  
(c) adjusting the pH of said slurry to about 7 to 7.5 with sodium hydroxide;  
(d) removing fiber from said slurry by centrifugation to produce a suspension;  
(e) pasteurizing said suspension;  
(f) ultrafiltering said suspension using a membrane having a molecular weight cutoff of up to 30,000 to produce a retentate;  
(h) pasteurizing said retentate by jet cooking at a temperature above about 93°C;  
(i) spray drying said retentate to form a product; and  
(j) recovering said product having a protein content of at least 70 wt.% of total dry matter and at least 2 mg of isoflavones per g of total dry matter.

20. A soy protein concentrate comprising a protein content of at least 70 wt.% of total dry matter, at least 2 mg of isoflavones per g of total dry matter, and less than 3 wt.% crude fiber of total dry matter.

21. The soy protein concentrate of claim 20 further comprising a combined raffinose and stachyose content of less than 50 mg/g of total dry matter.

22. The soy protein concentrate of claim 20 further comprising a Nitrogen Solubility Index (NSI) of greater than 80%.

23. The soy protein concentrate of claim 20 further comprising crude fiber of less than 2 wt.% of total dry matter.

24. The soy protein concentrate of claim 20, wherein the protein content is between 75 wt.% and 85 wt.% of total dry matter.

25. The soy protein concentrate of claim 20, wherein soyasapogenols contents is more than about 2.0 mg/g of total dry matter.

26. A food product comprising the soy protein concentrate made by the method of claim 20.
27. The food product of claim 26 comprising a liquid beverage.
28. The food product of claim 26 comprising a dry form of a beverage.
29. A method for manufacturing a soy protein concentrate comprising the steps of:
  - (a) providing a defatted soybean material;
  - (b) adding water to said material to form a slurry;
  - (c) removing fiber from said slurry to produce a suspension; and
  - (d) ultrafiltering said suspension using a membrane having a molecular weight cutoff of 1,000,000 to remove non-digestible oligosaccharides and to produce a product having a protein content of at least 70 wt.% of total dry matter and an isoflavone content of at least 2 mg/g of total dry matter.
30. The method of claim 29, wherein the product contains more than about 2.0 mg of soyasapogenols per g of total dry matter.
31. A food product comprising the soy protein concentrate made by the method of claim 1.
32. A food product comprising the soy protein concentrate made by the method of claim 19.
33. A food product comprising the soy protein concentrate made by the method of claim 29.